November 28, 2017

Pamela Creedon, Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA. 95670-6114

Subject: Grassland Bypass Project
Resubmittal of the Pesticide Evaluation Protocol Results and proposed pesticide monitoring constituents and schedule.

Dear Pamela,

As indicated in your June 9, 2016 letter regarding the Pesticide Monitoring Plan submittal for the surface water discharges from the Grassland Bypass Project, pesticide monitoring is to be identified using a list of pesticides and a set of evaluation factors provided by the Executive Officer (EO). For 2018 and hereafter, determining pesticides and metals (boron, copper, and zinc) for monitoring will occur through the Pesticide Evaluation Protocol (PEP; disseminated November 29, 2016).

The PEP process starts by comparing the pesticides applied within the Grassland Drainage Area over the past three years to the 376 pesticides on the EO list. The Coalition then adds degradates for a select number of pesticides and removes pesticides from the list through a series of steps provided in the PEP. The series of steps the Coalition used to determine the pesticides to monitor for the upcoming WY includes:

- Compiling the last three years of PUR data for each subwatershed
- Excluding pesticides not on the EO's list of pesticides,
- Adding degradates of any parent compounds that have reported usage,
- Grouping pesticides with the same toxicant in water,
- Calculating the cumulative monthly average for each pesticide,
- Calculating the annual use averaged by month for each pesticide,
- Calculating the Aquatic Life Relative Risk Ratio (cumulative monthly average divided by aquatic life reference value), and
- Calculating the Human Health Relative Risk Ratio (annual monthly use divided by human health reference value).

Pesticides were excluded from monitoring if any of the evaluation steps below were true.

842 SIXTH STREET
SUITE 7
P.O. BOX 2157
LOS BANOS, CA
93635
209 826-9696
209 826-9698 FAX

1. Pesticides with an organic carbon partitioning coefficient (K_{oc}) greater than 100,000 and an aquatic life reference value above 1 µg/L.
2. Pesticides with a hydrolysis half-life of less than one day.
3. Pesticides with both vapor pressure greater than $1x10^{-4}$ mPa and Henry's Law Constant greater than 100 Pa m^3/mol.
4. Pesticides with a Human Health Ratio less than 10 and an Aquatic Life Ratio less than 50.
5. Pesticides where the monthly use is less than 10% of the total applied over the past three years.
6. Pesticides with no commercially available analytical methods.

The Coalition evaluated pesticides based on the human health criteria where available; pesticides with Maximum Containment Levels (MCLs) or Numeric Criteria for Priority Toxic Pollutants for the State of California (CTR) are required to be considered for monitoring. These include 1,3-dichloropropene, copper, glyphosate, and oxamyl. Justification for not monitoring pesticides with MCLs/CTRs is included in the attached Excel workbook (tab "PEP_Grassland", Column "ExclusionNote"). Monitoring is not required for pesticides without adopted numeric criteria. Waterbodies within the Grasslands Drainage Area do not have a MUN beneficial use designation, and therefore no human health criteria are applicable. The initial ranking list for pesticides with human health concerns is included in the PEP analysis in the attached Excel workbook.

The 2012 303(d) list includes the following applied pesticides for the specific waterbody to be monitored by the Grassland Bypass Project: chlorpyrifos (San Joaquin River), diazinon (San Joaquin River), and boron (San Joaquin River and Mud Slough). Chlorpyrifos and diazinon are addressed through the San Joaquin River Diazinon and Chlorpyrifos TMDL, and boron is monitored weekly at all three monitoring locations (as outlined in Attachment B of Monitoring Order R5-2015-0094). In addition, all three pesticides are also addressed through the PEP process. Mud Slough, North (downstream of San Luis Drain) is also listed for pesticides (general category), which is also addressed through the PEP process.

Enclosed with this letter is a CD containing an Excel file with exclusion notes of the PEP process and additional rationale for the exclusion of pesticides. The file also includes separate tabs for the PUR data source ("DataSources" tab) and a proposed monitoring schedule that summarizes the results and lists the pesticide constituents to be monitored in each month. It should be noted that there is no historic pesticide monitoring data for the Grassland Drainage Area so there were no monitoring exclusions.

Table 1 shows the proposed Pesticide Monitoring Schedule resulting from the PEP analysis. This table lists the constituents that are likely to be detected, and in which month they are most likely to be detected. Table 2 lists the pesticides and analytical methods.

As indicated in Attachment B of Monitoring Order R5-2015-0094, pesticide monitoring is to occur at Sites B3, D, and R in accordance with the monitoring schedule shown in the attached tables.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel or represented members properly gather and evaluate the information submitted. Based on my

inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for violations. Please let me know if you have any questions.

Very truly yours,

Joseph C. McGahan
Drainage Coordinator
Grassland Basin Drainers

cc: Michael Jackson, US Bureau of Reclamation Fresno w/o CD
Jason Peltier, San Luis & Delta-Mendota Water Authority w/o CD
Ashley Peters, Central Valley Regional Water Quality Control Board w/o CD

TABLE 1: MONITORING SCHEDULE

Month	BIFENTHRIN	CARBARYL	CHLOROTHALONIL	CHLORPYRIFOS	Clothianidin	COPPER	CYFLUTHRIN	CYPERMETHRIN	DIMETHOATE	ENDOSULFAN	ESFENVALERATE	FENPROPATHRIN	FLUMIOXAZIN	IMIDACLOPRID	LAMBDA-CYHALOTHRIN	LINURON	MALATHION	METHOMYL	OXYFLUORFEN	PARAQUAT DICHLORIDE	PENDIMETHALIN	PERMETHRIN	TRIFLURALIN	Grand Total
Jan				X		X							X						X		X			5
Feb			X				X		X						X	X	X				X			7
Mar		X	X	X			X		X					X	X		X					X	X	10
Apr	X	X									X			X	X			X					X	7
May						X			X					X	X			X				X	X	7
Jun		X		X	X	X		X			X			X				X		X		X		10
Jul	X		X				X	X			X									X		X		7
Aug	X		X	X				X		X		X						X		X		X		9
Sep				X								X						X		X				4
Oct													X				X	X		X	X			5
Nov													X						X		X			3
Dec																			X				X	2
Grand Total	3	3	4	5	1	3	3	3	3	1	3	2	3	4	4	1	3	6	3	5	4	5	4	76

TABLE 2: PESTICIDES AND LABORATORY METHOD

Analyte	Method
BIFENTHRIN	EPA 8270M_NCI
CARBARYL	EPA 8321A
CHLOROTHALONIL	EPA 8081A
CHLORPYRIFOS	EPA 8141A
CLOTHIANIDAN	USGS MOD Pesticide Scan
COPPER	EPA 200.8
CYFLUTHRIN	EPA 8270M_NCI
CYPERMETHRIN	EPA 8270M_NCI
DIMETHOATE	EPA 8141A
ENDOSULFAN	EPA 8081A
ESFENVALERATE	EPA 8270M_NCI
FENPROPATHRIN	EPA 8270M_NCI
FLUMIOXAZIN	USGS MOD Pesticide Scan
IMIDACLOPRID	EPA 8321A
LAMBDA-CYHALOTHRIN	EPA 8270M_NCI
LINURON	EPA 8321A
MALATHION	EPA 8141A
METHOMYL	EPA 8321A
OXYFLUORFEN	EPA 8081A
PARAQUAT DICHLORIDE	EPA 549.2M
PENDIMETHALIN	EPA 8141A
PERMETHRIN	EPA 8270M_NCI
TRIFLURALIN	EPA 8141A